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RUCPDC/NOAA NMFS WASHINGTON DC
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SUBJECT: INDIA: PRESSING FORWARD WITH GPS, SATELLITE, MOON PROGRAMS

REF: STATE 14881

¶1. (U) SUMMARY: In an April 8 conversation, Shantanu Bhatawdekar, Indian Space Research Organization (ISRO) Officer on Special Duty in New Delhi, updated ESTOff on personnel changes in ISRO, progress on GPS systems, upcoming satellite launches, moon mission cooperation, and the Bhuvan application. The economic slowdown does not appear to have diminished ISRO's budget or its ambitions. END SUMMARY

¶2. (U) Bhatawdekar opened the conversation by mentioning that after the recent retirement of former Director for International Cooperation Dr. Jacob Ninan, the Director's position was split in two. Dr. D. Gowrisankar became Deputy Director for International Cooperation and Head Scientist, while Gopala Krishnan took over the policy, legal and MOU-related aspects of International Cooperation for ISRO. Both are based in Bangalore.

¶3. (U) Bhatawdekar next raised India's GAGAN project which he confirmed would provide regional augmentation to the U.S. GPS system. Expected to begin implementation in 2009 and reach full operational capability by 2011, ISRO expects the GAGAN system to achieve accuracy levels of less than three meters by using eight ground-based reference stations, a mission control center and a land uplink station to analyze ephemeris and environmental data and send correction information to the existing NAVSTAR constellation. He also noted GAGAN would serve as a mechanism to establish ISRO's knowledge base for its development of the Indian Regional Navigational Satellite System (IRNSS).

¶4. (SBU) Bhatawdekar stressed India's desire for self-sufficiency in global navigation capabilities, concern about loss of access to signals during a potential conflict, and inability to obtain desired accuracy levels from other providers as key motivators for developing the IRNSS. A December 2008 PowerPoint document by Gowrisankar and Director of Satellite Navigation Dr. SV Kibe indicated India has filed for frequencies in the range of 1164-1215 MHz in the L band and 2483.5-2500 MHz in the S band, and noted that frequencies for both standard and restricted positioning services would be L5 1176.45 MHz and S 2492.08 MHz. (NOTE: Bhatawdekar did not indicate whether IRNSS would be compatible with the U.S. GPS system, but suggested that the system should be usable by commercially available GPS receivers. END NOTE)

15. (SBU) ISRO plans to place all seven IRNSS satellites in orbit by 2011, including three in geosynchronous orbits (at 34, 83 and 132 degrees east) and four in geostationary orbits (two at 55, and two at 111.5 degrees east), with an expected coverage area of 40 to 140 degrees longitude and -40 to 40 degrees latitude with an accuracy of less than 20 meters. (NOTE: ESTOff notes this timeline is very ambitious, and likely to slip a year if not longer given ISRO's other space commitments and history of delays. END NOTE) While he did not provide a specific timeline of launches, Bhatawdekar said that in line before IRNSS were a microwave satellite for all-weather visibility on the C-band at 5.3 GHz, the OceanSat-2 satellite, and several other unspecified remote sensing satellites. Local press reports that the all-weather Radar Imaging Satellite (RISAT-1), containing an Israeli C-band synthetic aperture radar, is expected to be launched April 20, 2009 followed by a fully indigenous RISAT-2 by the end of the year.

16. (U) Despite expressing frustration at the inability of ISRO scientists to obtain timely visas to participate in a NASA-sponsored lunar conference in the US, Bhatawdekar was generally happy with the scientist-to-scientist collaboration between ISRO, NOAA and NASA - especially related to the Chandryaan-1 mission. He said ISRO was in the process of deciding on payloads for the Chandryaan-2 mission, which would definitely include a moon lander and rover developed in conjunction with the Russians, and he expected ISRO to release a formal announcement of the opportunity to submit proposals for international payloads in the near future. Regarding press reports of a manned moon mission, Bhatawdekar said that was not under serious consideration at the moment and that ISRO intends to put a man into low-earth orbit, but probably not until 2015 at the earliest. The project is estimated to cost approximately INR 120 billion (USD 2.4 billion) spread over two Five Year Plan periods.

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17. (SBU) Press hoopla of a March 2009 launch notwithstanding, ISRO's Google Earth-like application known as Bhuvan has still not been completed and a prototype of the interface and database is not expected to be available for the director's review for 3-4 months, according to Bhatawdekar. Bhuvan will rely solely on Indian imagery, despite no plans to launch additional satellites, and provide worldwide coverage updated at least annually. Based on an established Government of India (GOI) security protocol, imagery of sensitive Indian sites will not be provided to the public but will be used for government and military purposes. Bhatawdekar believed there was a mechanism for other countries to request sensitive data be blocked out or not published on the public website, but wasn't sure what that process would be. He said the goal was to provide a more detailed focus on India and the region for value added products on issues like droughts, floods, natural disasters, and crop growth, for example. Customers will also be able to purchase high-resolution images from the GOI's Remote Sensing Agency in Hyderabad. Bhatawdekar acknowledged that there were significant technical hurdles to overcome in several areas including frequent updates to the imagery, file sizes, bandwidth restrictions, and security reviews.

18. (SBU) COMMENT: The global economic slowdown does not seem to have impacted funding for ISRO's space programs - which are a centerpiece of India's national pride and remain very ambitious. Recent turnover in ISRO's International Cooperation office, compounded by slow progress on U.S.-India commercial space launch and technology safeguards agreements, has reduced space research conversations and coordination between the U.S. and India. Bhatawdekar was a very friendly and conversational interlocutor who freely answered questions on programs with which he was familiar, and who gave ESTOff the impression that ISRO was interested in further strengthening space relations with the U.S. In the meantime, ISRO continues to reach out to other countries, especially Russia, France and Israel, for cooperation and assistance in their space programs.

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